

WHAT IS CLAIMED IS:

1. A color wheel fabrication method, in which a color wheel including a disk-shaped substrate made of a light-transmittable medium and a plurality of filters arranged on the substrate is fabricated, each filter being capable of selectively transmitting rays of light having a desired wavelength, the method comprising the steps of:

forming at least one of a plurality of adjoining selective color-transmittable films as the filters each at a predetermined area on a front side of the disk-shaped substrate; and

utilizing, as a mask for exposure from a back side of the disk-shaped substrate, a portion containing at least one of two borders with which each one of the plurality of adjoining selective color-transmittable films is defined.

2. A color wheel fabrication method, in which a color wheel including a disk-shaped substrate made of a light-transmittable medium and a plurality of filters arranged on the substrate is fabricated, each filter being capable of selectively transmitting rays of light having a desired wavelength, the method comprising the steps of:

(1) applying a photoresist onto an entire area at a front side of the disk-shaped substrate;

(2) masking areas except a first predetermined area of the substrate covered with the photoresist using a photomask to remove the photoresist resting on the first predetermined area by exposure and subsequent development;

(3) forming a first color-transmittable film on an entire area at the front side of the substrate resulting from step (2);

(4) performing a lift-off process to remove the first color-transmittable film resting on the photoresist, thereby shaping the first color-transmittable film to cover the first predetermined area;

(5) applying a photoresist onto an entire area at the front side of the  
5 substrate resulting from step (4);

(6) masking part of the first color-transmittable film and a third predetermined area of the substrate covered with the photoresist using a photomask from a back side of the substrate to remove the photoresist resting on a second predetermined area by exposure from the back side of the substrate and subsequent  
10 development;

(7) forming a second color-transmittable film on an entire area at the front side of the substrate resulting from step (6);

(8) performing a lift-off process to remove the second color-transmittable film resting on the photoresist, thereby shaping the second color-transmittable film to  
15 cover the second predetermined area;

(9) applying a photoresist onto an entire area at the front side of the substrate resulting from step (8);

(10) performing exposure of an entire area of the substrate from the back side of the substrate and subsequent development to remove the photoresist resting on the  
20 third predetermined area;

(11) forming a third color-transmittable film on an entire area at the front side of the substrate resulting from step (10); and

(12) performing a lift-off process to remove the third color-transmittable film resting on the photoresist, thereby shaping the third color-transmittable film to cover  
25 the third predetermined area.

3. A color wheel fabrication method according to claim 2, wherein the photomask used in step (6) masks an area corresponding to a sector of which a central angle  $\theta$  formed between two radii is:

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$$360 \text{ degrees} / 3n < \theta < 2 \times 360 \text{ degrees} / 3n$$

where the number of cycles of the color-transmittable films provided cyclically in a single unit of the color wheel is  $n$  ( $n$ =natural number); and the central angle of each sector of the color-transmittable films is  $360 \text{ degrees} / 3n$ .

10 4. A color wheel fabrication method according to claim 2, wherein the step (10) includes the substep of masking part of the third predetermined area using a photomask from the back side of the substrate before performing the exposure of the entire area of the substrate from the back side of the substrate.

15 5. A color wheel fabrication method according to claim 2, wherein the third color-transmittable film formed in step (11) is a blue color-transmittable film.

6. A color wheel fabricated by the color wheel fabrication method according to any one of claims 1 through 5.

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